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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/997,590	11/29/2001	Manfred R. Kuehnle	102085-0001	6230
24267	7590	12/13/2004	EXAMINER	
CESARI AND MCKENNA, LLP 88 BLACK FALCON AVENUE BOSTON, MA 02210			LEE, DAVID J	
			ART UNIT	PAPER NUMBER
			2633	

DATE MAILED: 12/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/997,590

Applicant(s) ~~U~~

KUEHNLE ET AL.

Examiner

David Lee

Art Unit

2633

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-9 and 12-14 is/are rejected.
- 7) ☐ Claim(s) 10 and 11 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 December 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. ____   |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____  | 6) <input type="checkbox"/> Other: ____                                     |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "oculus" of claims 10, 11, 12, and 14 must be shown or the feature(s) canceled from the claim(s). Also, the "holding plate", "the equatorial electrode", and the "electrode gratings" of claim 14 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 14 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding claim 14, the "equatorial electrode", "the holding plate", and "fine electrode gratings" and their respective functions are not disclosed in the specification or included in the drawings, and the "oculus" is not included in the drawings, and therefore disables one of ordinary skill in the art to make or use the invention.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 7, 9, and 12-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 refers to "the method defined in claim 11" (line 1 of claim 7), however claim 11 does not define a method and it is indefinite and unclear as to what "method" the applicant is referring to.

Claim 9 refers to "name one" and "name two" (lines 3-4 of claim 9), and it is unclear as to what is meant by this.

Claim 12 recites the limitation "the spherical body of oculus" in line 1 of claim 12. There is insufficient antecedent basis for this limitation in the claim.

Claim 13 recites the limitation "the oculi" in lines 2-3 of claim 13. There is insufficient antecedent basis for this limitation in the claim.

Regarding claim 13, the phrase "such as" in line 3 of claim 13 renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim 14 recites the limitation "the holding plate" in line 3 of claim 14. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Objections***

6. Claim 3 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim should refer to other claims in the alternative only. Claim 3 cannot depend on both claim 1 and claim 2. See MPEP § 608.01(n).

### ***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Sotom et al (US Patent No. 5,896,212).

Regarding claim 1, Sotom teaches a network of inter-connectable optical fibers equipped, at strategic locations, (fig. 4) with devices that can respond to optical signals emanating from a particular source (fig. 4 – input Em) as part of a message or data stream to determine the destination and select suitable fibers to assure its arrival at the point of destination, using at said locations: a. lambda-extractor switches for single frequencies to signal the switching logic (fig. 4, wavelength extractor 13); b. nanosecond responsive switches to re-direct the data flow into appropriate other optical fibers on an instantaneous time basis (fig. 5, switches SW1, SW2, SWi, SWn); c. massive cross-connecting switches that enable the connection to any incoming fiber to any outgoing fiber within one module in a mechanically asynchronous manner (fig. 4, space switch 16).

Regarding claim 2, Sotom teaches that the message to be sent is preceded by optical code signals that identify the destination causing the setting up of the appropriate photonic switches to connect the incoming fiber to the relevant outgoing fiber using the switch configuration and network architecture described herein (col. 5, lines 10-11, and lines 57-60).

Regarding claim 3 as understood in view of the 112 rejection above, Sotom teaches a lambda extractor device (col. 4, line 8) that is able to extract individual single frequencies from a glass fiber (col. 1, line 27. also – fiber is made out of glass) that carries many frequencies ( $\lambda_1 \dots \lambda_i$ , and  $\lambda_c$ ) in parallel (col. 3, lines 45-47), said single

Art Unit: 2633

frequency ( $\lambda_c$ ) being useful, as part of other single frequencies, to operate a logic circuit (col. 6, lines 30-43).

9. Claims 6 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Morozov et al (US Patent No. 5,798,580).

Regarding claim 6, Morozov teaches a method of achieving cross-switching of optical signals (col. 6, line 65) from various fiber ends to other various fiber beginnings (col. 7, lines 30-32), which method features a space across which the optical signals are transmitted, that method allowing any X/Y location within a matrix pattern to be addressed by obliquely aimed laser beams converting said space to achieve an optical connection between input and output (col. 3, line 64 to col. 4, line 6, and fig. 8).

Regarding claim 8, Morozov teaches a cross-connect optical switch to achieve individual cross communications traversing said space from one incoming fiber, or any number thereof, to a second fiber (fig. 5 – free space cross-connect switch), or any selected number thereon, on the second plate (fig. 5 – the second plate is considered to be the bottom portion of the switch), with aid light beams being able to criss-cross each other in the space between the plate so as to simultaneously cross-connect optical data points (fig. 5 – the light beams criss cross each other) for the purpose of sending them on their way to their respective destinations (fig. 5 – the output channels send the data to their respective destinations).

***Claim Rejections - 35 USC § 103***

Art Unit: 2633

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sotom in view of Bobb et al (US Patent No. 4,438,517).

Regarding claim 4, Sotom discloses all the limitations as applied to claim 1 above except for the limitation that the nanosecond switch for optical data streams operates with polarized light and Brewster Angle reflection or transmission in accordance with the polarity of the incoming and/or outgoing light. Bobb discloses a polarization switch, which is considered a nanosecond switch for optical data streams operates with polarized light and Brewster Angle reflection or transmission in accordance with the polarity of the incoming and/or outgoing light (col. 2, lines 27-48). It would have been obvious to one of ordinary skill in the art at the time of invention to use the polarization switch as indicated by Bobb in the system of Sotom because polarization switching schemes are known to have a faster switching rate, and the zero point of measurement cannot change, which prevents mechanical wear. Therefore one of ordinary skill in the art at the time of invention would have been motivated to use the polarization switch of Bobb in the system of Sotom.

12. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sotom in view of Morozov.



Regarding claim 5, Sotom discloses all the limitations as applied to claim 1 above except for the limitation that each of said cross switch connects any incoming fiber in a given space to any outgoing fiber in said space using optical projection between designated, switchable fibers. Morozov teaches that each of said cross switch connects any incoming fiber in a given space to any outgoing fiber in said space using optical projection between designated, switchable fibers (see claim 6 rejection above – “optical projection” is the laser). One of ordinary skill in the art would have been motivated to use optical projection between incoming and outgoing fibers as indicated by Morozov in the system of Sotom in order to provide more versatility in switching capabilities and less contention, therefore it would have been obvious to use an optical projection scheme such as Morozov's in the network switching system of Sotom.

13. Claims 10 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Lee whose telephone number is (571) 272-2220. The examiner can normally be reached on Monday - Friday, 9:00 am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2633

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

David Lee



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